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# **Expanding the Scope of the Tropical Forest Conservation Act: Exchanging Foreign Debt for Sustainable Development**

David M. Leon<sup>1</sup>

*I am committed to using the Tropical Forest Conservation Act to help countries redirect debt payments toward local projects that will protect biodiversity and tropical forests.*

President George W. Bush  
From a speech given at the third Summit of the Americas  
Quebec City, Canada  
April 21, 2001

## **I. Introduction**

In the past twenty years, two ostensibly separate yet ultimately interdependent crises – government debt and environmental destruction – have plagued much of the world. Environmental debt exchanges, or “debt for nature” exchanges, offer a generally effective means of curbing environmental destruction while paying off foreign national debt. This comment will briefly delineate the various reasons, methods, and mechanics for conducting such transactions, evaluate selected methods in light of prevalent criticisms and concerns, then explore current trends and possibilities for future innovations. Upon this analysis several points come to light, among them the growing need to redirect the focus of environmental debt exchanges to eliminate the root causes of poverty and environmental degradation.

## **II. Origins, Definitions, and Dynamics of Environmental Debt Exchanges**

Mexico and Brazil began the global debt trend in 1982, announcing that they would be unable to repay the entirety of their foreign debt as normally scheduled.<sup>2</sup> By 1990 the total external debt accumulated by all debtor countries hit US \$ 1,319,000,000,000.<sup>3</sup> To stave off bankruptcy, many debtor nations resorted to plundering their own natural resources through logging, ranching, and raising annual cash

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<sup>2</sup> See Morris Miller, DEBT AND THE ENVIRONMENT: CONVERGING CRISES, at 9 (1991) [hereinafter Miller].

<sup>3</sup> *Id.* at 11.

crops for export.<sup>4</sup> The benefits of these practices proved to be short-term and localized. By contrast, the costs of mining, logging, ranching, and farming tropical rainforests involve long-term global losses.<sup>5</sup> Between 1980 and 1995, 540 million acres of tropical forest were cut down,<sup>6</sup> contributing to higher levels of carbon dioxide in the atmosphere.<sup>7</sup> The destruction of forests also deprives the world community of valuable resources, including medicines and organic genetic materials used for agriculture.<sup>8</sup>

In 1984 Dr. Thomas Lovejoy, then vice-president of the World Wildlife Fund ("WWF"), proposed the "debt-for-nature" exchange as a means of lowering international debt while reducing environmental destruction.<sup>9</sup>

The entire exchange process hinges on the high likelihood that the debtor nation would never pay its debts at all. Faced with such a prospect, the creditor is far more willing to sell the "bad" debt at a discount to recoup at least a fraction of its original investment. In the classic debt-for-nature model, a non-governmental conservation organization ("NGO") purchases foreign-currency denominated debt of the debtor country in the international debt market at a substantial discount. The NGO presents the debt to the central bank of the debtor country for redemption in local currency. The debt is officially retired and the NGO uses the local currency proceeds to fund environmental projects in the debtor country.<sup>10</sup>

In other words, if a country owed a bad debt of \$10 million, an NGO could purchase that debt in the secondary market for \$5 million, then sell it back to the same debtor country for \$7 million. Thus, "the

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<sup>4</sup> See Diana J. Eitman, *Maintaining Sovereignty and the Tropical Rainforests: The Promise of Debt for Nature Swaps*, 24 ENVIRONS ENVTL. L. & POL'Y J. 29, 31-34 (2001) [hereinafter Eitman].

<sup>5</sup> See Roger W. Findley, *Legal and Economic Incentives for the Sustainable Use of Rainforests*, 32 TEX. INT'L. L.J. 17, 19-20 (1997) [hereinafter Findley].

<sup>6</sup> USAID, *USAID and the Environment: What We Do: Why Protect Forests through 'Debt-for-Nature' Swaps?*, available at [http://www.usaid.gov/environment/why\\_protect\\_forests.html](http://www.usaid.gov/environment/why_protect_forests.html).

<sup>7</sup> Carbon dioxide contributes to the "greenhouse effect." See INTERGOV'T PANEL ON CLIMATE CHANGE, SECOND ASSESSMENT REPORT (1995).

<sup>8</sup> Eitman, *supra* note 4, at 20.

<sup>9</sup> See Thomas E. Lovejoy, *Aid Debtor Nation's Ecology*, N.Y. TIMES, Oct. 4, 1984 at A31 [hereinafter Lovejoy].

<sup>10</sup> Rosanne Model, *Debt-for-Nature Swaps: Environmental Investments Using Taxpayer Funds Without Adequate Remedies for Expropriation*, 45 U. MIAMI L. REV. 1195, 1197 (1991).

developing country has reduced its debt, the [creditor] has reduced its liability, . . . the [NGO] has made a profit,"<sup>11</sup> and the cause of environmental conservation is furthered.

The basic debt-for-nature model has evolved on several levels. For example, the identity and number of the parties may vary. In three-party debt exchanges, an NGO solicits debt donations or purchases reduced-value debt from a creditor on the secondary debt market. The NGO then negotiates conservation arrangements with debtor country. In bilateral exchanges the creditor and the debtor country negotiate directly. Early environmental debt exchanges relied heavily on international NGO's, but recently creditor nations have developed domestic legislation facilitating bilateral debt exchanges with debtor countries.<sup>12</sup> Since 1989 Holland, Sweden, Germany, Switzerland, and the United States have each independently financed debt-for-nature exchanges.<sup>13</sup>

Once the parties negotiate the underlying agreement, different organizations can implement the conservation measures within the debtor country. Sometimes the conservation measures are carried out by agencies specially created by the debtor country for that purpose, or by international NGO's operating within the debtor country, or by NGO's operating under the laws of the debtor country.<sup>14</sup>

The form of the debt may also vary. The debt may be commercial debt owed to private lending institutions such as commercial banks. The debt may be trade debt owed to foreign exporters.<sup>15</sup> It may be bilateral debt owed to a creditor nation. Or it may be multilateral debt owed to an international or regional multilateral lending institution.<sup>16</sup>

Finally, the ends sought by the parties can vary. The term "debt-for-nature" has been used to refer generically to three distinct types of

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<sup>11</sup> Eitman, *supra* note 4, at 43.

<sup>12</sup> See, e.g., Tropical Forest Conservation Act, 22 U.S.C. §2431 (1998).

<sup>13</sup> See Amanda Lewis, *The Evolving Process of Swapping Debt for Nature*, 10 COL. J. INT'L ENVTL. L. & POL'Y 431, 441-45 (1999).

<sup>14</sup> For example, in a 1987 debt-for-nature transaction between the Nature Conservancy, the World Wildlife Fund, and Ecuador, the proceeds were used to establish and fund Fundacion Natura, an Ecuadorian NGO. See *id.* at 437. Poland has established a government-managed "Ecofund" to manage its debt-for-nature projects. *Id.* at 443.

<sup>15</sup> For example, in 1990, the Central Bank of Madagascar exchanged foreign export debt with Conservation International in a debt-for-nature transaction. *Id.* at 439.

<sup>16</sup> For example, the Paris Club, an association of seventeen nations including the United States, Brazil, Canada, and Japan, forgave approximately US \$16.5 billion in Polish debt. *Id.* at 442-43.

transactions. A better generic term is "environmental debt exchange" or "EDE."<sup>17</sup> In true "debt-for-nature" transactions, "the NGO utilizes the local currency funds to finance environmental projects such as pollution studies or waste treatment facilities."<sup>18</sup> In "debt-for-land" transactions, the parties preserve ecologically sensitive areas – often tropical rain forests – through zoning or creation of national parks. Almost all debt for land transactions involve a "debt-for-nature" component to fund research or training programs necessary for land preservation. Finally, the "debt-for-equity" exchange involves the creditor or NGO acquiring title to debtor country assets including land, natural resources, or industrial facilities.

### III. An Evaluation of the Issues

By the late 1980's, EDE's had been used to retire over one trillion dollars of foreign national debt.<sup>19</sup> Innovations in environmental debt exchanges met with varying success depending on the interface of the selected methods with the particular issues arising from the debtor countries' social, political, and environmental landscapes. For example, debt for land exchanges proved more suitable to agricultural economies, debt for nature programs proved most helpful in mitigating pollution, and debt for equity proved most suited to unproductive industrialized economies.<sup>20</sup> However, EDE's are not without their difficulties.

#### A. Pre-Exchange Barriers

Some difficulties surface before any exchange has been made. One barrier to transacting debt exchanges involves the lack of bad debt in needy countries. Because debt exchanges are possible only through creditor's expectations of non-payment, when debtor nations service their foreign debts, those debts are not likely to be discounted on the secondary market and environmental debt exchanges are less likely to

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<sup>17</sup> See Nicolas M. Kublicki, *Green Finance: Problems and Solutions Concerning Alternative Environmental Debt Exchanges*, 18 VT. L. REV. 313, 316-319 (1994) [hereinafter Kublicki]. Mr. Kublicki prefers the term "alternative environmental debt exchange" or "AEDE" to refer to foreign debt exchanges for environmental improvement. However, the term "environmental debt exchange" is more accurate, because while it is true that these exchanges are strictly "alternatives" to the regular payment of the debt, the debts at issue are "bad debts" that will never be paid.

<sup>18</sup> *Id.* at 317.

<sup>19</sup> *Id.* at 315. However, the debt retired represents only .05% of existing external national debt and .2% of existing commercial debt. *Id.* at 336, n. 110.

<sup>20</sup> *Id.* at 325.

occur.<sup>21</sup> It can be argued that conventional foreign assistance would suffice for these nations. While conventional foreign assistance may be cheaper and less risky for the creditor nations and institutions, environmental debt exchanges present a greater likelihood that the conservation measures will actually succeed. Precisely because debt exchanges are more costly and risky, creditors will be more likely to squeeze environmental benefits out of the transaction to fulfill their investment.<sup>22</sup>

Another barrier involves political climate. Political instability in the debtor country may prevent effective decision-making and furnish a lack of support for the debtor country's leaders. There may also be a lack of political will in creditor entities to partake in environmental debt exchanges due to the possibility of a harsh budgetary impact. Finally, the debtor nation may lack the necessary fiscal resources to transact an exchange requiring national implementation funding. Parties can work around this problem by structuring debt for land or debt for equity exchanges requiring less local funding.

### **B. Post-Exchange Difficulties**

Once an exchange occurs, several points of concern arise. The most prevalent difficulties include preserving debtor countries' national sovereignty, respecting indigenous sovereignty, avoiding inflation, and enforcing the terms of the exchanges.

#### **1. National Sovereignty**

As with many areas of international law, national sovereignty continually surfaces as a primary concern in EDE's. "Sovereignty" connotes nations' freedom from control by other nations, subject to international law. The United Nations has passed several resolutions since the 1950's explicitly stating that nations have the right to sovereignty over their own natural resources.<sup>23</sup> Debt for equity and debt

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<sup>21</sup> Botswana, Eritrea, Gambia, Namibia, and Swaziland regularly pay their debts but are suffering from desertification. See *Debt-for-Environment Swaps for National Desertification Funds*, at <http://www.undp.org/seed/unso/public/swap-eng1.htm>.

<sup>22</sup> Suffice to say this comment operates on the assumption that when creditor nations and organizations commit to foreign aid, those entities do not desire a monetary return on investment so much as a concomitant improvement in the quality of life in the debtor nation.

<sup>23</sup> See, e.g., G.A. Res 523, U.N. GAOR 6<sup>th</sup> Sess., Supp. No. 20, at 20, U.N. Doc. A/2119 (1952); G.A. Res. 3281, U.N. GAOR 29<sup>th</sup> Sess., Supp. No. 31, at 50, U.N. Doc. A/9631 (1975).

for land exchanges produce serious sovereignty concerns because creditors take title to debtor country property or exercise control over debtor country land use.

Despite inescapable foreign ownership of debtor country assets in debt for equity exchanges, such transactions do not infringe on national sovereignty to the degree once feared. Although debtor countries cede property to creditors in debt for equity transactions, the same outflow of currency would take place were the debtor country to pay its debt as scheduled.<sup>24</sup> Furthermore, economic benefits are likely to accrue to the debtor country if the creditor's operation of industrial or agricultural businesses requires a local workforce.<sup>25</sup> In any event, all such businesses are subject to the debtor country's tax regime, and thus contribute to the debtor country's sovereign revenue.<sup>26</sup>

To assuage residual concerns regarding sovereignty, a portion of foreign businesses' profits may be restricted to the debtor country's domestic economy. Brazil and Chile have both initiated measures restricting the repatriation of debt for equity profits.<sup>27</sup> Debt for equity exchanges can also create long-term leases instead of transferring title. The leases would end whenever the creditor recovered the debt, and all the while the debtor country would maintain title to the property.

Debt for land exchanges also raise sovereignty concerns because such transactions effectively operate as perpetual zoning regulations. Any attempt by the debtor country to use the land for any other purpose constitutes a material breach of the agreement. Resentment has developed within debtor countries for creditors who dictate debtor country land use law. However, those harboring such resentment might bear in mind that debt for land exchanges are not mandatory, nor are they generally secured by coercion in a conventional sense.<sup>28</sup> These environmental debt exchanges are in fact the product of the debtor country's consent. Sovereignty provisions may nevertheless occupy a greater role in the structuring of the debt for land transaction if the parties agree that debtor country representatives shall sit on the decision-making panel regulating the use of proceeds from the transaction.

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<sup>24</sup> See Kublicki, *supra* note 17, at 327-29.

<sup>25</sup> See *id.*

<sup>26</sup> See *id.*

<sup>27</sup> *Id.* at 320, n. 83.

<sup>28</sup> Claims of "economic coercion" against creditors have been explored and rebutted based on debtor nation acceptance of the terms of EDE's. See Priya Alagiri, *Give Us Sovereignty or Give Us Debt: Debtor Countries' Perspective on Debt-For-Nature Swaps*, 41 AM. U. L. REV. 485, n.74 (1992) [hereinafter Alagiri].

Similarly, debtor country representatives may also occupy positions on the panels regulating debt-for-nature programs, which constitute a lesser threat to debtor country sovereignty than debt-for-equity or debt-for-land exchanges. Balancing such decision-making and regulatory panels presents an added layer of difficulty because for every debtor country representative on the panel to protect sovereignty, one less creditor or NGO representative sits on the panel to enforce the terms of the agreement. Thus, to some degree sovereignty concerns clash with enforcement concerns.

## 2. Indigenous Sovereignty

Indigenous sovereignty concerns first arose in 1987 when Conservation International ("CI") failed to consult with 25,000 Moxo Indians living in Bolivia's Chimanes Forest before transacting a debt for land exchange. The Moxo were in the process of seeking title to the land when CI completed the transaction. Under CI's "conservation" regime, the Moxo could not sustain their prior existence.<sup>29</sup>

The Moxo debacle remains an early and extreme example of creditor and NGO disregard for indigenous populations. However there remains a lingering danger that parties to an EDE may ignore the lifestyles of debtor country residents in favor of a "deep ecology" approach that values nature for its own sake, many times to the detriment of human quality-of-life.<sup>30</sup> The profusion of EDE's in the last 15 years has been weighted heavily in favor of creating nature preserves and parks. Even where such EDE's succeed in incorporating the indigenous population,<sup>31</sup> the benefits of past EDE's to local populations have been scant at best.

In fact, local sentiment towards park preservation efforts can turn violent. In 1994, the head warden of Tayrona National Park in Northern Colombia was murdered, the sixth park officer killed in twenty years.<sup>32</sup> After these killings, illegal settlers planted crops, hunted, cut down trees, and prospected for gold in the park. Local officials illegally gave deeds to these settlers, and eventually private parties owned 80% of the park.<sup>33</sup> To prevent resentment developing within local populations, those groups

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<sup>29</sup> See *id.* at 499-500.

<sup>30</sup> See A. Dan Tarlock, *Earth and Other Ethics: The Institutional Issues*, 56 TENN. L. REV. 43, 60 (1988).

<sup>31</sup> For example, USAID's debt-for-land swap with the Philippines in 1991 incorporated indigenous people as park rangers. Alagiri, *supra* note 28, at 505.

<sup>32</sup> Eitman, *supra* note 4, at 18.

<sup>33</sup> *Id.*



who will be affected by a debt for land transaction should have some seat(s) on any decision making board.

The Tropical Forest Conservation Act authorizes United States funding EDE's that "support ... the livelihoods of individuals living in or near a tropical forest in a manner consistent with protecting such tropical forests."<sup>34</sup> Taken in broad perspective, this provision proves the most essential element of any EDE. Whatever benefits forest conservation presents to creditors, EDE's invariably affect local populations. Those local populations more often than not determine the fate of the ecosystem in which they live. If the roots of environmental destruction are to be properly addressed, EDE's must not only preserve flora and fauna, but also improve the indigenous population's quality of life.

### 3. Enforceability

The problem of how to enforce an EDE instrument should a breach occur has provided inspiration for academic debate,<sup>35</sup> but the problem has never manifested itself in practice.<sup>36</sup> The incentives not to breach are so strong that it is unlikely that EDE breaches will ever present as serious a problem as once thought. Nevertheless, it remains unclear how exactly the parties' rights should be protected in the event of a breach. While the incentives to adhere to the agreement definitely exist on the macro-level, individual corruption within debtor countries and creditor entities remains a live issue.

Generally, EDE's are signed in the debtor country.<sup>37</sup> Thus the most obvious forum for an action on the EDE instrument would be a debtor country tribunal, especially in the case of an individual appropriating funds from within the debtor country. Regarding a breach on a national level, however, the debtor country may adhere to the doctrine of sovereign immunity, which would require the country's unlikely consent to be sued. Legal action brought in an international tribunal against a debtor country would also require the consent of both the debtor and the creditor, and international courts lack viable enforcement mechanisms to effectuate judgments against non-cooperative parties. Bringing an action in another tribunal – such as the courts of the country in which the creditor or NGO is based – is another option.

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<sup>34</sup> 22 U.S.C. § 2431(g) (2002).

<sup>35</sup> Lovejoy, *supra* note 9.

<sup>36</sup> Kublicki, *supra* note 17 at 343.

<sup>37</sup> *Id.* at 342.

In the event of a material breach of the EDE instrument by the debtor country, the structure of bilateral debt for equity exchanges provide the creditor with a means of recourse. Specifically, the creditor can refuse to cancel the amount of debt the parties agreed upon. This option is unavailable in multilateral transactions because the creditor would have already forgiven the debt.

The best mechanism for addressing EDE breaches in debt-for-nature and debt-for-land transactions involves negotiating for the seating of a balanced administrative panel to oversee the transaction from beginning to end. For example, as early as 1989, in a debt-for-land transaction between Holland and Costa Rica, either government was authorized to suspend a conservation project's funding and inspect the reforestation fund's accounts and projects. And in the massive transaction between the Paris Club and Poland in 1991 both Polish and Paris Club member nation representatives were appointed to Poland's Ecofund Steering Committee. However, enforceability measures can clash with sovereignty concerns. For every foreign member of an administrative board, there is one less debtor country national and one more degree of local control lost.

#### **4. Inflation and Other Economic Concerns**

The capital inflow generated by environmental debt exchanges can lead to inflation because one of the easiest ways to create inflation is to simply print more money. Theoretically, if enough cash generated by an EDE were simply dumped into the debtor country economy via conservation efforts, prices would rise not only for the commodities upon which the debtor country citizens depend, but also for the items that the EDE needs to operate.

Yet serious inflation has never resulted from an EDE, possibly because no EDE has generated enough currency to impact the overall economy of a debtor nation.<sup>38</sup> However, the debt for nature program consummated in 1994 between UNICEF and Senegal encountered initial problems resulting from devaluation of the Senegalese currency. In December 1993, UNICEF purchased for US \$6 million US \$24 million worth of bilateral and commercial debt Senegal owed to Argentina.<sup>39</sup> The Senegalese government agreed to pay UNICEF the equivalent of US

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<sup>38</sup> *Id.* at 333.

<sup>39</sup> James P. Resor, *Debt for Environment Swaps for National Desertification Funds* (Dec. 6, 2001), at <http://www.undp.org/seed/unso/concepts&programs/pub-htm/swap-eng1.htm>3types.

\$11 million in Senegalese Francs over three years to support health, sanitation, and water projects in Senegal. But one month later in January 1994, the Senegalese Franc was devalued by 50% and because Senegalese payments were linked to the dollar, the devaluation doubled the Senegalese payment obligation. The parties renegotiated the payment period to four years, and redefined the payments in terms of Senegalese Francs.<sup>40</sup>

When structuring the EDE, parties should take inflation into account, even if only in terms of the debtor country's domestic inflation rate. NGO's have two main options when releasing EDE funds. The money can be released in a lump sum or in the form of bonds. Bonds are the preferred mechanism to shield the funds from inflation.<sup>41</sup> If released in bonds, the interest on the bonds should be linked to the inflation rate to keep the bonds' value steady. For example, assume a \$1000 bond issued in 2000 pays 10% per annum, and the inflation rate of the debtor nation is also 10%. In 2000, the interest on the bond is \$100, but in 2001 the bond is only worth \$900 (in 2000 dollars), so the interest on the bond drops to \$90. However, if the interest rate on the bond were added or "linked" to the inflation rate, the interest rate would stand at 20%. Thus, the interest in 2001 on the same devalued \$900 bond would be \$110 (in 2000 dollars).

Inflation affects different types of EDE's proportionally to the amount of local currency needed for the EDE. Debt-for-nature programs are most susceptible to problems resulting from inflation because local currency is needed to implement training and management programs. Debt-for-land involves less expenditure of local currency; debt-for-equity exchanges do not depend on local currency at all, and thus enjoy better insulation from inflation concerns.

However, debt-for-equity exchanges are subject to asset valuation difficulties. Because debtor country debt is owed by the debtor country's government, government assets are transferred to the creditor. These assets lack proper market valuation because state-owned assets are generally of a type not traded on the free market, which would otherwise assign value based on supply and demand. This problem is especially severe in former communist states where the state owned all means of production and the free market has not taken sufficient hold to dictate market values of state property.<sup>42</sup>

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<sup>40</sup> *Id.*

<sup>41</sup> Kublicki, *supra* note 17, at 333, n. 104.

<sup>42</sup> *See id.* at 340.

Thus, the value of state assets in debt-for-equity exchanges must be resolved by negotiation. Specific criteria may assist in guiding these negotiations. If the asset is a physical commercial facility, the price can be determined by the construction costs minus any depreciation.<sup>43</sup> If the asset is a natural resource, the price can be determined by commodity pricing in the debtor country's own market.<sup>44</sup> And if the debt for equity exchange is structured as a long-term lease, the value can be set by how much benefit the creditor derives from it.<sup>45</sup> A long-term lease allows for the greatest efficiency because asset valuation by the commodity pricing and cost-depreciation methods leaves open the possibility that a forest worth \$1 million in timber exchanged in 2001 would increase or decrease substantially in value before the creditor can realize the exact payment of the debt amount. By keeping up-to-date financial records on a long-term lease venture, the debt amount can be paid exactly over time.

#### IV. Shifting the Focus of EDE's to Improve Quality of Life

EDE's are not an end in themselves, but rather a means of achieving specified ends.<sup>46</sup> Improving EDE's involves seeking sources and mechanisms geared toward specific goals to further the debtor country's community incentive to develop sustainably, and the global community's interests in recouping loans.

The first wave of enthusiasm and opportunity for EDE's passed in the 1980's and early 1990's. More recently, several factors have decreased opportunities for future EDE's. First, some debtor countries, including the Philippines and Mexico, have restructured their external debt. Such restructuring permits regular servicing of the debts, and lifts those nations from the realm of countries whose debt has devalued to the point that creditors are willing to sell at sufficient discounts to legitimate an EDE. Also, EDE feasibility ultimately depends on creditor institutions' willingness to allocate foreign assistance. In times of shrinking national foreign aid budgets<sup>47</sup> EDE's are unappealing because

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<sup>43</sup> See *id.* at 340-41.

<sup>44</sup> See *id.*

<sup>45</sup> See *id.*

<sup>46</sup> See James P. Resor, *Debt-for-Nature Swaps: A Decade of Experience and New Directions for the Future* (1997), at <http://www.fao.org/docrep/w3247e/w3247e06.htm> [hereinafter Resor].

<sup>47</sup> "According to the OECD Development Assistance Committee ("DAC") 'official development assistance (ODA) from DAC members in 1997 fell to ... a record low of 0.22% of DAC members' collective GNP'" in 1997. More recently, however, at a UN Convention in Monterrey, Mexico, wealthy industrialized nations have promised increased foreign aid assistance.

of their cost. And when international, political or financial crises grasp popular attention, EDE's can be easily forgotten.

Nevertheless, EDE's continued to develop and flourish after a lull in the mid-1990's. Many new EDE's have been structured to create environmental funds, which, if managed well, can generate independent funding for long-term environmental health. The United States' Tropical Forest Conservation Act ("TFCA") represents new legislation that uses the "fund" method. The TFCA also neutralizes former concerns regarding sovereignty and enforcement. Multilateral lending institutions represent a possible new source of EDE funding. And programs such as emissions trading and land reform present admirable goals for future EDE's.

#### A. Environmental Funds

In 1993, the Philippine and American governments and the WWF adopted the idea that EDE's, once transacted, could eventually fund themselves in perpetuity if managed properly. Thus began the Foundation for the Philippine Environment ("FPE"), a capitalized NGO with a \$26 million endowment initially funded by two bilateral EDE's between the United States and the Philippines. FPE's endowment is the largest of its kind in the world.<sup>48</sup> FPE's board of trustees incorporates representatives from Philippine development and conservation organizations, government agencies, the Philippine business community, academia, and international conservation organizations.<sup>49</sup> Similar trust funds have been established in Colombia, Belize and Uganda.<sup>50</sup>

In 1988 the Global Environment Facility (GEF) reported that the number of operative funds increased from twenty-one in 1994 to forty-six in 1997, mostly in Latin America and the Caribbean.<sup>51</sup> By 2000, at least eleven more funds were forming and some forty-five more had been proposed.<sup>52</sup>

While environmental fund structure and operation differs according to several variables including the laws of the beneficiary nation and the mandates of the fund source, three general types of funds

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<sup>48</sup> See Resor, *supra* note 46.

<sup>49</sup> *Id.*

<sup>50</sup> See *id.*

<sup>51</sup> See GLOBAL ENV'T. FACILITY, EXPERIENCE WITH CONSERVATION TRUST FUNDS, EVALUATION REPORT NO. 1- 99 (1999) [hereinafter Global Env't. Facility].

<sup>52</sup> See Ricardo Bayon, Carolyn Deere, Ruth Norris, and Scott E. Smith, *Environmental Funds: Lessons Learned and Future Prospects*, at <http://economics.iucn.org/pdf/topics-18-01.pdf> (2002) [hereinafter Bayon et al.].

have been recognized. The first type of fund – the national environmental fund – supports a wide variety of endeavors according to a national environmental plan or strategy. Such funds have been established in Bhutan and Bolivia.<sup>53</sup> The second type of fund supports the conservation and management of specific geographical areas, whether individual parks or entire park systems. This type of “park” fund exists in Uganda, Peru, and Jamaica.<sup>54</sup> The final type of fund involves making grants to NGO’s and community groups for conservation projects. “Grant” funds, provided for in the TFCA,<sup>55</sup> operate in Brazil and the Philippines.<sup>56</sup> Most operating funds are either park funds or grant funds.<sup>57</sup>

The legal structure of environmental funds depends upon the laws of the beneficiary country. In common law countries the funds are known as “trusts” and in civil law countries the funds are known as “foundations.”<sup>58</sup> Many funds have attained non-profit corporation status. Some have been established by an act of the national legislature.<sup>59</sup> Funds may incorporate one or more financial structures within their overall operation. Endowments invest capital and use money generated by their investments to finance activities, while sinking funds distribute all capital and investment income over a predetermined time period, and revolving funds replenish their original capital with new funding.<sup>60</sup> EDE’s provide the most common source of financing for environmental funds.<sup>61</sup>

If managed effectively, environmental funds can be effective long-term financing tools for conservation and sustainable development efforts. By combining the public sector and various segments of the private sector,<sup>62</sup> environmental funds strengthen each sector individually

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<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> See 22 U.S.C. § 2431(h): “Each beneficiary country ... shall establish a Tropical Forest Fund”; §2431(g): “Grants from a fund shall be made to nongovernmental environmental, forestry, conservation, and indigenous peoples organizations.”

<sup>56</sup> Global Env't. Facility, *supra* note 51.

<sup>57</sup> *Id.*

<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> See, e.g., 22 U.S.C. §2431g (“the administering body shall consist of one or more individuals appointed by the United States Government; one or more individuals appointed by the government of the beneficiary country; and individuals who represent a broad range of environmental nongovernmental

and foster an atmosphere of cooperation and trust by decentralizing decision-making. If properly balanced, pluralistic fund management can also reinforce debtor country sovereignty while ensuring enforcement. However, such funds can also constrict scarce capital and generate little income, while increasing the bureaucracy between beneficiary countries and financing organizations.<sup>63</sup> And many funds need to spend resources on improving their own management, implementing monitoring and accounting systems, and helping local NGO's and community organizations write grant proposals and attain implementation skills.<sup>64</sup>

To be effective, environmental funds should be established for long-term environmental projects requiring significant amounts of money for implementation.<sup>65</sup> If the project is minor, or if it needs to be implemented quickly, environmental funds may not be appropriate. The debtor country government must support power-sharing with the private sector.<sup>66</sup> Diverse elements of the private sector must cooperate, and the debtor country's legal and financial regimes must be strong and developed enough to support the funds.<sup>67</sup>

#### **B. Developments in United States Legislation**

As recently as October 16, 2001, the United States House of Representatives approved \$10 million in annual appropriations for coral reef conservation through EDE's for fiscal years 2002 to 2005.<sup>68</sup> The

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organizations of, or active in the beneficiary country; local community development nongovernmental organizations of the beneficiary country; and scientific, academic, or forestry organizations of the beneficiary country").

<sup>63</sup> See generally Ilya Shapiro, *'Green' Bill a Lesson in Big Government, Small Benefits*, THE DAILY PRINCETONIAN, Oct. 1, 1998, available at <http://www.dailyprincetonian.com/Content/1998/10/01/edits/column1.html> [hereinafter Shapiro].

<sup>64</sup> Global Env't. Facility, *supra* note 51.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> See *Coral Reef and Coastal Conservation Act: Hearings on H.2272 before the House* (2001), available at

<http://www.legislative.noaa.gov/coralhousedebate101601.html>. The act seeks to protect coral reefs through "debt-for-nature swaps, debt buybacks, or debt restructuring instruments." During the House debate, it was noted that "half a billion people, eight percent of the world's population, live within one hundred kilometers of a coral reef" and "coral reefs provide fisheries for food and raw materials for new medicines and pharmaceuticals. Tourism and recreation flourish along coral reef tracts and provide jobs and real income for coastal residents. They also provide shore protection, shielding coastal communities

Coral Reef and Coastal Marine Conservation Act of 2001 was modeled on the TFCA.<sup>69</sup> “The TFCA authorizes the President to reduce certain bilateral government debt owed to the United States under the Foreign Assistance Act of 1981 or Title 1 of the Agricultural Trade and Development and Assistance Act of 1954.”<sup>70</sup> In exchange for the reduction in bilateral debt, the beneficiary debtor country establishes a “Tropical Forest Fund”<sup>71</sup> to accumulate and disperse local currency for the benefit of the nation’s tropical forests.<sup>72</sup>

The TFCA expands upon earlier legislation to facilitate more effective EDE’s. For example, more nations are eligible for EDE’s under the TFCA. Under the previous EDE legislation, the Enterprise for the Americas Initiative of 1991 (“EAI”),<sup>73</sup> only Latin American and Caribbean nations qualified for debt-for-nature transactions. However, the TFCA did adopt some of the other eligibility requirements under the EAI, and added certain new restrictions. As in EAI transactions, “the government [of the debtor country] must be democratically elected, must not support acts of international terrorism, must cooperate on international narcotics control matters, must not violate internationally recognized human rights, and must institute any needed investment

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and harbors from violent storms and erosion.” The bill passed by a 382 to 32 vote, with 16 members not voting. Countries such as “Jamaica, Belize, the Dominican Republic, the Philippines, and Thailand could benefit from this legislation.” California representative Tom Lantos stated “[i]t speaks to the strength of this body and this nation that in the midst of a war we take time to pass important environmental legislation.”

<sup>69</sup> 22 U.S.C. § 2431(g)(2)(A) (1998).

<sup>70</sup> United States Mission to the European Union, *Biden Bill to Reauthorize Tropical Forest Conservation Act* (June 12, 2001), at <http://www.useu.be/Categories/Environment/EnvTropRainForrest12June01.html>

<sup>71</sup> See 22 U.S.C. § 2431h (“Each beneficiary country . . . shall be required to establish a Tropical Forest Fund.”).

<sup>72</sup> See 22 U.S.C. § 2431g (“Grants from a fund shall be made to (A) nongovernmental environmental, forestry, conservation, and indigenous peoples organizations of, or active in the beneficiary country; or . . . (C) in exceptional circumstances, the government of the beneficiary country.”).

<sup>73</sup> 7 U.S.C. § 1738 (1994). Under the EAI, the United States forgave 53.8% of the \$1626.3 million in debt owed by Latin American nations. See *supra* note 46. Since 1996, debt-for-nature transactions under EAI and TFCA have improved the management of over 1,103,198 hectares of natural forest and tree systems worldwide. See USAID, *Budget Justification, FY 2002 – Environment*, available at [http://www.usaid.gov/pubs/cbj2002cent\\_prog/global/env/934-001\\_2.html](http://www.usaid.gov/pubs/cbj2002cent_prog/global/env/934-001_2.html) [hereinafter Budget Justification].



reforms.”<sup>74</sup> However, the TFCA elaborates on the last criterion by requiring that the debtor country “put in place major investment reforms, as evidenced by the conclusion of a bilateral investment treaty with the United States, implementation of an investment sector loan with the Inter-American Development Bank, World Bank-supported investment reforms, or other measures, as appropriate.”<sup>75</sup> These eligibility requirements address the United States’ enforceability concerns by targeting beneficiary nations that can show certain types of guarantees of accountability and trustworthiness.

The TFCA also provides for an administrative body in every beneficiary country to control fund disbursements. These bodies shall include (1) United States government officials, (2) beneficiary country government officials, and (3) representatives from beneficiary country organizations concerned with the environment, community development, science, academia, and forestry.<sup>76</sup> The majority of the members must come from the third category.<sup>77</sup> However, the United States government retains a high degree of control, especially over large projects. First, the president selects eligible nations for an EDE under the TFCA,<sup>78</sup> (the Secretary of State is authorized to enter into specific agreements with debtor nations<sup>79</sup>), fifteen presidentially-appointed board members oversee TFCA activities worldwide,<sup>80</sup> and most importantly, “[a]ny grant of more than \$100,000 from a Fund shall be subject to veto by the Government of the United States.”<sup>81</sup>

A major problem with the TFCA is that Congress unnecessarily limited it to “developing countr[ies] *with [] tropical forest[s]*.”<sup>82</sup> Countries lacking “tropical forests” will have to depend on independent legislation such as the Coral Reef Act. To streamline the process, the TFCA should be amended to apply to countries even if those countries lack a tropical forest. A more appropriate designation would target biodiversity “hotspots,” areas of the globe that support the most life per acre.<sup>83</sup> Such an amendment would obviate the need to use congressional time passing new bills for every distinct ecosystem.

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<sup>74</sup> 22 U.S.C. § 2431.

<sup>75</sup> 22 U.S.C. § 2431(c).

<sup>76</sup> See 22 U.S.C. § 2431.

<sup>77</sup> See 22 U.S.C. § 2431(g).

<sup>78</sup> See 22 U.S.C. § 2431(c).

<sup>79</sup> See 22 U.S.C. § 2431(g).

<sup>80</sup> See *supra* note 5.

<sup>81</sup> 22 U.S.C. § 2431(g).

<sup>82</sup> 22 U.S.C. § 2431(c)(emphasis added).

<sup>83</sup> For further elaboration on hotspots, see

Of course, broadening the eligibility requirements for the TFCA may necessitate increased funding.<sup>84</sup> Congress has authorized increased spending, but the current presidential administration did not allocate the full amount of funding authorized for fiscal year 2002, allocating only US \$30 million for fiscal year 2002.<sup>85</sup> Under recent amendments to the TFCA, the president was authorized to spend up to \$50 million on TFCA activities in 2002.<sup>86</sup> This gap leaves room for the \$10 million in annual Coral Reef Act allocations with \$10 million to spare.

TFCA activities currently include sustainable harvesting programs in Indonesia, Brazil, Guyana, Belize, and Bangladesh.<sup>87</sup> In March 2000, President Clinton allocated up to \$6 million for an EDE in Bangladesh.<sup>88</sup> In July 1998, the Bangladesh transaction was the first authorized under the TFCA.<sup>89</sup> The transaction is geared to improve environmental management of the world's largest mangrove forest. Known as the Sunderbans, this forest covers Bangladesh's southwest region and houses one of the world's largest populations of the highly endangered Bengal tiger.<sup>90</sup>

USAID, the agency authorized to implement TFCA transactions, has taken a broad approach to applying the Bangladesh Tropical Forest Conservation Foundation's funds. The overall goal of USAID's program in Bangladesh involves "strengthen[ing] the ability of the government of Bangladesh and the local non-governmental organizations (NGO's) working in this area to improve environmental and natural resources management."<sup>91</sup> USAID has taken the approach referred to in the

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[www.conservation.org/xp/CIWEB/strategies/hotspots.xml](http://www.conservation.org/xp/CIWEB/strategies/hotspots.xml).

<sup>84</sup> 22 U.S.C. § 2431(d) authorized US \$25 million for 1999, \$75 million for 2000, and \$100 million for 2001.

<sup>85</sup> U.S. Dep't of State, *Fact Sheet: U.S. Tropical Forest Conservation Act* (April 21, 2001), at <http://usinfo.state.gov/tropical/global/environ/01042112.htm>.

<sup>86</sup> The Senate recently passed S.1021, which authorizes \$50 million for 2002, \$75 million for 2003, and \$100 million for 2004. 22 U.S.C. § 2431 (1998). See *Senate Approves Lugar's Tropical Forest Conservation Act* (July 24, 2001), at <http://www.senate.gov/~lugar/072401a.html>.

<sup>87</sup> See Budget Justification, *supra* note 73; The Nature Conservancy, *Landmark Deal to Protect Rainforests in Belize* (Aug. 2, 2001), available at <http://nature.org/aboutus/press/press326.html>.

<sup>88</sup> World Wildlife Fund, *WWF Applauds U.S. Debt-For-Nature Swap in Bangladesh* (March 20, 2000), available at <http://www.worldwildlife.org/news/headline.cfm?newsid=113>.

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> See USAID, Bangladesh, at <http://www.usaid.gov/bd/Environment.html> [hereinafter USAID, Bangladesh].

"Eligible Activities" subsection of the TFCA, which provides for fund disbursements to "conserve, maintain, and restore the tropical forests in the beneficiary country, through . . . *development and support of the livelihoods of individuals* living in or near a tropical forest."<sup>92</sup> USAID's approach seeks "integrated management" by viewing ecosystems as "includ[ing] human use, [and] living patterns." One program USAID implemented in the Bangladesh transaction, the Management of Aquatic Ecosystems through Community Husbandry ("MACH"), aims to increase household income and food security through environmentally sound management of floodplain resources.<sup>93</sup> USAID also seeks to implement programs to increase energy efficiency, including using clean fuels, reducing system loss, and installing photovoltaic solar energy panels.<sup>94</sup> USAID has also contracted with the United States Forest Service to provide technical assistance to other national governments to prevent forest fires so that "farmers and forest managers will profit from investments made by USAID."<sup>95</sup> This approach addresses the root causes of environmental degradation in ways earlier transactions have not. These new EDE's improve upon past EDE's by focusing on improved human lifestyles as an integral element in ecosystemic health.

Belize also transacted an environmental debt exchange with the United States under the TFCA. In August 2001, the United States agreed to forgive US \$1.4 million in Belizean bilateral debt in exchange for the protection of 23,000 acres of forest, including 16 miles of coastline.<sup>96</sup> The transaction will cut Belize's debt to the United States by one half.<sup>97</sup> Belize will issue \$7.2 million in local currency payable to Belizean NGO's, which will establish endowment funds to manage the protected lands. In a related agreement, The Nature Conservancy will provide \$800,000 to the United States government to fund the transaction. The Nature Conservancy's role in the Belizean transaction represents the first NGO participation in a TFCA exchange.<sup>98</sup>

The TFCA has been subject to some criticism, but remains the United States' best legislation to enable effective EDE's. Critics charge

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<sup>92</sup> 22 U.S.C. § 2431(d)(2000)(emphasis added).

<sup>93</sup> USAID, Bangladesh, *supra* note 91.

<sup>94</sup> *Id.*

<sup>95</sup> See *supra* note 85. In 2000, the Forestry Team evaluated the causes of forest fires in Indonesia by collecting biological and socio-economic data, then advised the Indonesian government on a response strategy where Indonesians take the lead role.

<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

that the TFCA is not “market-based, and does not benefit either American taxpayers, foreign citizens or the environment.”<sup>99</sup> While such criticism may ring true regarding foreign citizens in debt for land transactions, it cannot be maintained that debt for nature conservation programs implemented in much of the world have not had some positive effect on the environment and debt loads of certain countries.

### C. Multilateral Debt

The majority of past EDE's have been three-party exchanges of commercial debt or bilateral debt exchanges involving bilateral debt.<sup>100</sup> As commercial and bilateral debt burdens lighten, multilateral debt increases in significance for potential EDE's.<sup>101</sup> Until recently, however, multilateral creditors were unwilling to reduce debtor country obligations because multilateral lenders claimed “preferred creditor status.”<sup>102</sup> Multilateral lenders support their claim to preferred creditor status because they extend credit on concessionary terms to countries that would otherwise lack access to financing. The IMF and World Bank in particular argue that cancellation of multilateral debt would cripple creditors' ability to secure financing for future lending.<sup>103</sup>

Recent developments have opened the possibility for EDE's operating on multilateral debt. In 1996, the International Monetary Fund and the World Bank proposed the Heavily Indebted Poor Countries Initiative (“HIPC”) to reduce multilateral debt on a case-by-case basis. The HIPC represents the possibility of multilateral lending institutions forgiving bad debt. Theoretically, forgiving multilateral debt could form the basis for future EDE's, although no such exchanges have yet occurred. James P. Resor, Director of Conservation Enterprises for the United States World Wildlife Fund, claims that EDE's funded by

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<sup>99</sup> Shapiro, *supra* note 63 (reporting that under the EAI, Jamaican environmental NGO's spent “\$400,000 on a ‘school bee project,’ \$569,000 on a ‘motor vehicle,’ \$959,000 on a ‘conference’ in Barbados, \$1.9 million on a ‘Latrine Project (Phase I),’ and \$2.8 million on ‘soil solarization’”). However, enforcement mechanisms in the TFCA improved on the EAI. The EAI lacked the provision written into the TFCA subjecting grants of over \$100,000 to veto by the United States Government, 22 U.S.C. § 2431g. Furthermore, it remains entirely possible that despite the vague descriptions, each of these expenditures was scrutinized and legitimately authorized for specific programs.

<sup>100</sup> See *supra* note 39.

<sup>101</sup> *Id.* Multilateral debt composes 30% of Sub-Saharan Africa's long term finance.

<sup>102</sup> See *id.*

<sup>103</sup> See *id.*

leveraging multilateral debt offers “the most significant opportunity for the next generation of debt conversions.”<sup>104</sup>

#### D. The Kyoto Protocol

One attractive goal for EDE transactions involves the Kyoto Protocol (“Protocol”),<sup>105</sup> specifically the three flexibility mechanisms: joint implementation (“JI”),<sup>106</sup> the clean development mechanism (“CDM”),<sup>107</sup> and International Emissions Trading (“IET”).<sup>108</sup> Joint implementation allows Annex B nations (countries obligated under the Protocol to enforce emissions levels) and private-sector companies within Annex B nations to trade emissions credits with each other on a project-by-project basis.<sup>109</sup> Any emissions credits traded through a JI transaction would be subtracted from the host country’s overall emissions allocations, providing host countries with high incentive to regulate such transactions closely. However, JI has little application to debt-for-nature transactions because of insufficient overlap between debtor nations eligible for EDE’s and industrialized Annex-B nations.

CDM transactions also operate on an individual project level, but CDM transactions occur between Annex B and non-Annex B nations.<sup>110</sup> Although the scope of CDM trading remains largely undefined, nations are currently allowed to “bank” CDM-generated Certified Emissions Reductions (“CER’s”) credits.<sup>111</sup> As such, CDM presents the highest incentive for trading emissions credits by means of EDE’s. It has been argued that through the CDM developing nations could find financial incentive to meet emissions standards, and thus become more amenable to ratifying the Kyoto Protocol.<sup>112</sup> However, several difficulties must be resolved before such emission trading could operate effectively.

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<sup>104</sup> *Resor, supra* note 46.

<sup>105</sup> Kyoto Protocol to the United Nations Framework Convention on Climate Changes, Dec. 10, 1977, U.N. Doc, FCC/CP.1977/b.7Add.1, reprinted in 37 I.L.M. 22 (1998) [hereinafter Protocol].

<sup>106</sup> *Id.* art. 6.

<sup>107</sup> *Id.* art. 12.

<sup>108</sup> *Id.* art. 16.

<sup>109</sup> See *Market-Based Mechanisms for Greenhouse Gas Abatement*, at <http://www.ceeindia.org/greenhousegases/abater.htm>.

<sup>110</sup> *Id.*

<sup>111</sup> Nations are allowed to bank credits as of the year 2000. *Id.*

<sup>112</sup> See generally Sean Michael Neal, *Bringing Developing Nations on Board the Climate Change Protocol: Using Debt-for-Nature Swaps to Implement the Clean-Development Mechanism*, 11 GEO. INT’L. ENV’T L. L. REV. 163 (1997).

The CDM allows an industrialized nation to apply a developing nation's emissions reductions towards the industrialized nation's compliance. For example, an American power plant may need to increase its productivity from 1000 megawatts to 1500, may be bound by emissions standards to its present level of carbon dioxide emissions.<sup>113</sup> The plant operates at 40% efficiency, and it would be prohibitively expensive to implement the technology needed to achieve the 60% efficiency needed to generate 1500 megawatts from the same input that now generates 1000 megawatts. A power plant in a non-Annex B country operates at 25% efficiency. The American plant could fund a retrofit at the developing nation's plant to raise efficiency to 40%, at a lower cost than it would have incurred were it to retrofit its own facilities. The lower cost results from the likelihood that fewer facilities would need retrofitting, and the technology needed to implement efficiency gains from 25% to 40% in a developing nation is cheaper than what would be needed to increase efficiency from 40% to 60% in a more developed nation.<sup>114</sup> This scenario saves the American utility money, keeps carbon dioxide emissions constant, and improves the developing nation's plant at no cost to the plant's owners. EDE's could provide the funding for such retrofitting.

This idea sounds promising, but some criticize CDM transactions because it remains possible that by selling their emissions rights for short-term technological improvement, developing countries risk a bleak future. This future involves stricter emissions standards, and costlier credits in the hands of those developed nations which all along avoided having to improve their own efficiency by partaking in CDM transactions. A ceiling on the proportion of emissions credits gained by CDM trading might ease this fear. Implementation and enforcement of CDM transactions also present a valid concern. As with JI transactions, nations may be held accountable for their private industry's CDM credit trading.

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<sup>113</sup> This example comes from Richard Williamson, *Global Emissions Trading: Lessons from Domestic Law and Arms Control*, 1996 Meeting of Am. Soc'y of Int'l Law at 493-499 (transcript on file with University of Miami International and Comparative Law Review).

<sup>114</sup> According to one estimate, abatement of one ton of carbon would cost US \$25 in India, \$175 in the United States, and \$400 in a highly efficient nation such as Japan. *Market Mechanisms: Some Concerns*, at <http://www.ceeindia.org/greenhousegases/equitr.htm>.

### E. Land Reform

Like the new programs implemented in Bangladesh discussed above, land reform serves as a long-term solution to international environmental degradation by increasing local incentive to practice long-term sustainable development. "Land reform" generally means public acquisition and redistribution of large, private, underutilized landholdings to landless peasants as family or communal farms, preferably with accompanying credit and technical assistance where needed."<sup>115</sup> Such programs have been undertaken by numerous countries, sometimes co-operating with American NGO's, and many times with significant success.<sup>116</sup>

By generating locally owned farms, land reform programs provide a viable incentive for sustainable environmental development. The new landowners are much less likely to slash and burn forests in hopes of turning a quick profit. "[O]n any given holding, a cultivator with ownership or an equivalent secure and permanent owner-like tenure is far more likely to make long-term capital and 'sweat-equity' investments that improve and conserve the land than will a cultivator with insecure tenure."<sup>117</sup> The land reform option also addresses national and indigenous sovereignty concerns associated with past EDE's by creating a new class of secure producers more willing and able to exercise legitimate political power in regimes currently dominated by military force and oligopoly.

Land reform can serve as a means of strengthening democracy and defusing the desperation that can lead to terrorism. In fact, immediately after Fidel Castro came to power in Cuba, President Kennedy's Alliance for Progress supported Latin American land reform "to forestall rural unrest and [forcible] communist takeovers elsewhere in Latin America."<sup>118</sup> Redistributing freeholds to private farmers can empower previously voiceless citizens, and provide a base of capital for local sustainable development and democracy. Grant funds established

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<sup>115</sup> Findley, *supra* note 5, at 23.

<sup>116</sup> During the past thirty years several foreign governments implemented their own land reform programs, including Columbia and Brazil. See Eitman, *supra* note 4 at 23-24. Other nations have co-operated with the Seattle-based Rural Development Institute to entitle more than seventy million families to land in South Vietnam, the Philippines, El Salvador, Egypt, Russia, Kyrgyzstan, China, and Moldova. See Rural Dev. Inst., 1999 Annual Report, at 7, available at <http://www.rdiland.org>.

<sup>117</sup> Roy Prosterman & Tim Hanstad, *Land Reform: Neglected, Yet Essential*, Rural Dev. Inst. Reports on Foreign Aid and Dev. #87 (April 1995).

<sup>118</sup> Findley, *supra* note 5, at 23.

under the TFCA could provide the means for land reform programs in debtor countries.

However, land reform has not always been a smooth process. Government land reform efforts in Brazil and Columbia have met with political opposition from large landowners wary of expropriation. In countries with a federal government system, there also exists a tension between the centralized national power elite and the local authorities charged with implementation. In Brazil, the federal government has enacted legislation and created a federal agency, "INCRA," to implement land reform. However, little public land has been effectively redistributed. The trend has been to encourage settlement of remote public lands, extending little technical or financial assistance. This trend flows from the influence of large landowners, who with the help of conservative judges have delayed and sometimes frustrated the expropriation process.<sup>119</sup>

For example, even though land reform is authorized by the Article 184 of the Brazilian Constitution of 1988, one legal argument has proved fatal to expropriation efforts. Article 184 allows the government to appropriate private land "not fulfilling its social function." However, Article 185 prevents "productive property" from being expropriated.<sup>120</sup> Armed with the Article 185 exception, large landowners successfully argue that all of their land is being used "productively," and thus cannot be expropriated. The Brazilian legislature has not implemented summary expropriation procedures. Colombia has experienced many of the same problems as Brazil, also due mainly to the political and legal strength of large landowners.

For land reform efforts to succeed, several key mechanisms should be implemented. First, redistributed land should come from large, privately owned, and underutilized tracts. This way, government forests could continue to be preserved as parkland and recipients of the redistributed tracts would not become isolated. The contracting parties should set specific criteria to mark lands eligible for expropriation. One method of marking land for expropriation involves setting a ceiling on private holdings. For example, land in excess of 1000 acres may be appropriated. This method is appealing because it facilitates a bright-line rule. However, if a large landowner productively farms all of his 2000 acres, the injury to the landowner and the concomitant cost of appropriation increases.

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<sup>119</sup> Findley, *supra* note 5, at 23-24.

<sup>120</sup> See BRAZ. CONST. art. 185.



Another method of marking land involves provisions similar to those in article 184 of the Brazilian Constitution, allowing expropriation of "underutilized" land. This method accounts for the possibility that a large landowner farms all his land, but the definition of "underutilized" can generate excessive debate, as the failed Brazilian and Colombian expropriation proceedings have illustrated. The best method combines a ceiling and a use requirement. For example, all underutilized land over 1000 acres may be appropriated.

Second, owners of expropriated land must be adequately compensated. Compensation need not be exact market value, but should come fairly close. EDE's can be elemental in providing a pool of money with which landowners can be compensated. And because large farms are subject to market forces, no asset valuation difficulties arise.

Third, local individuals and families must attain long-term secure rights to tracts of land proportionate to their farming capabilities, with accompanying credit extensions and technical assistance. After title has vested, the new owners should be able to access loans, using their land as collateral. Still, some perfunctory government financial assistance may be necessary for the new owners to make basic first steps to running a profitable, sustainable farm. The new owners should be well-educated in the most proficient means of farming the particular tract. This education could be carried out based on research by local NGO's, indigenous tribes, or trade unions.

Most importantly, the rule of law and government authority must be clearly defined and respected. The criteria and process for expropriation should be carried out at the federal level, and the implementation of the process should be carried out locally. The family coming into possession of the redistributed tracts must have legal assistance before, during, and after the transfer. The government and NGO's implementing the transfers would also need assistance developing and applying real property law.<sup>121</sup> In formerly centralized economies like China and Russia, it remains to be determined how freely new owners may transfer or mortgage their properties. To remedy the burgeoning tangle of legal issues which land reform programs would create, local and regional legal aid centers need to be established.<sup>122</sup>

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<sup>121</sup> For example, the Seattle-based Rural Development Institute assisted in drafting a substantial portion of Kyrgyzstan's 1999 Land Code, Law on Mortgage, Law on Cooperatives, Peasant Farm Law, and Law on Revisions to the Civil Code. *See supra* note 113, at 14.

<sup>122</sup> The Rural Development Institute founded two legal aid centers in the Russian provinces of Vladimir and Samara. Staffed with local attorneys, by 1999 these

If these land reform measures could be successfully written into debt for nature transfers, the effect would not only be far more beneficial to long-term global environmental health, but also immediately beneficial to local and indigenous people in the debtor country.

## V. Conclusion

The environmental debt exchange is a useful tool to combat environmental destruction and foreign debt. In its earlier forms, the EDE was subject to sovereignty, enforcement, and inflation concerns. Early EDE's were often used to preserve parkland, but by ignoring human quality-of-life issues in debtor countries, the conventional EDE transaction merely glossed the surface.

More recently, EDE's have become more streamlined and sophisticated. Environmental funds provide a steady stream of money for conservation programs, and those programs have shifted their focus to local populations' interaction with debtor countries' ecosystems. In addition to the old paradigm of land preservation, the new EDE's have been used to implement aid programs developing sustainable farming techniques and energy efficiency. Future EDE's could fund programs to alleviate poverty and reduce air pollution. By expanding the ends of debt-for-nature exchanges, the destructive social trends that created the problems of debt and environmental degradation can be more effectively addressed and human quality of life could be improved worldwide.

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centers had assisted more than 750 clients, won 12 court decisions, and published 70 articles in local newspapers. *See supra* note 113, at 14.